ABSTRACT

A system and a method for generating a digital image indicative of an internal anatomy of a person over a respiratory cycle are provided. The method includes scanning the internal anatomy of the person at a plurality of positions along an axis to obtain scanning data, wherein the scanning at each position is performed over at least one respiratory cycle of the person. The method further includes generating a plurality of cross-sectional digital images based on the scanning data. The method further includes generating a plurality of cross-sectional digital image groups, each group comprising at least two digital images of the plurality of cross-sectional digital images wherein each of the two digital images indicate the internal anatomy at a substantially similar respiratory state. The method further includes generating a plurality of 3-D digital images, wherein each digital image of the plurality of 3-D digital images is determined from a corresponding one of the plurality of cross-sectional digital image groups. Finally, the method includes processing the plurality of 3-D digital images to obtain a resultant 3-D digital image indicating positions of at least a portion of the internal anatomy of the person during at least the respiratory cycle.